

2010

2015

2020

2025

2030

Forest-Based Sector  
Technology Platform



# Fortschritt durch Forschung – Die Europäische Dimension: Die Forest-Based Sector Technology Platform (FTP)

Kimmo Kalela  
FTP Director

*Freiburger Winterkolloquium*

*Freiburg, 29 Januar 2009*

[www.forestplatform.org](http://www.forestplatform.org)





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- ▶ Research and Development in Forest Based Sector – Relative Position
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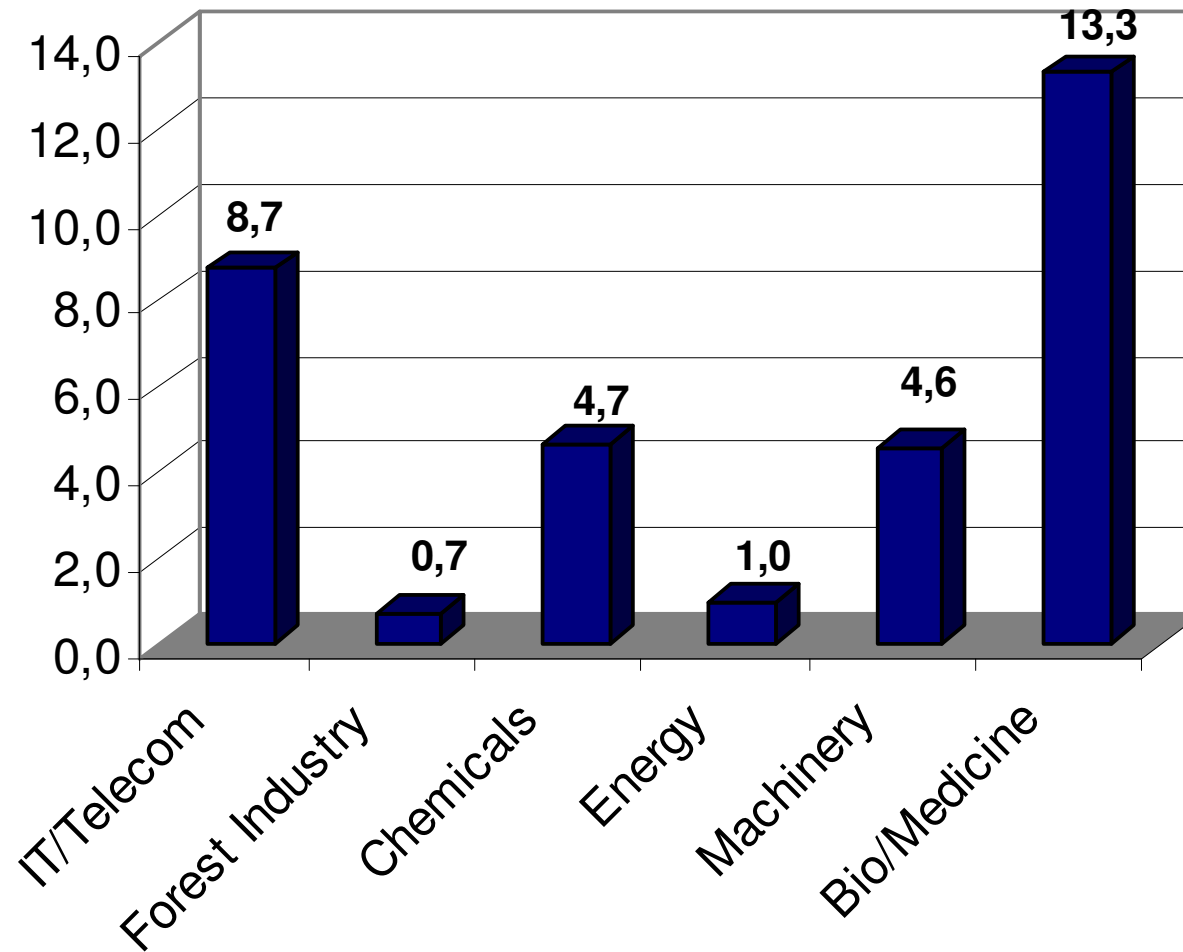


## FTP Director, Kimmo Kalela

- ▶ MSc. Of Engineering, Helsinki University of Technology, 1966
- ▶ Working Experience:
  - 1986 – 2002                      Stora Enso Oyj, Senior Executive Vice President, Publication Papers
  - 1978 – 1986                      Tervakoski Oy, Speciality Paper Mill, Production Director
  - 1972 – 1978                      Jaakko Pöyry & Co Oy, Project Director, Brazil
  - 1966 – 1972                      Forest Owners' Industrial Group, Kirkniemi and Savon Sellu Mills, Production Superintendent
- ▶ Other Activities:
  - 2003 - 2006 Member of Supervisory Board of Fortum, Finnish Power Company
  - 1999 - 2002 Chairman of Board, Cepiprint, Confederation of European Publication Paper Mills
  - 2000 - 2002 Chairman of Board, Finnish Pulp and Paper Research Institute



## R&D Expenses as % of Sales – 2002-2005 average







## R & D Areas in a Typical Forest Industry Enterprise

- ▶ Own R & D within R & D department
- ▶ R & D done together with Universities etc (Basic Research)
- ▶ R & D done either alone or in consortiums with Pulp and Paper Research Institutes ( PTS, KCL, STFI, etc)
- ▶ R & D with partner customers
- ▶ R & D done with the supplier industry
- ▶ R & D done in EU Research Structures



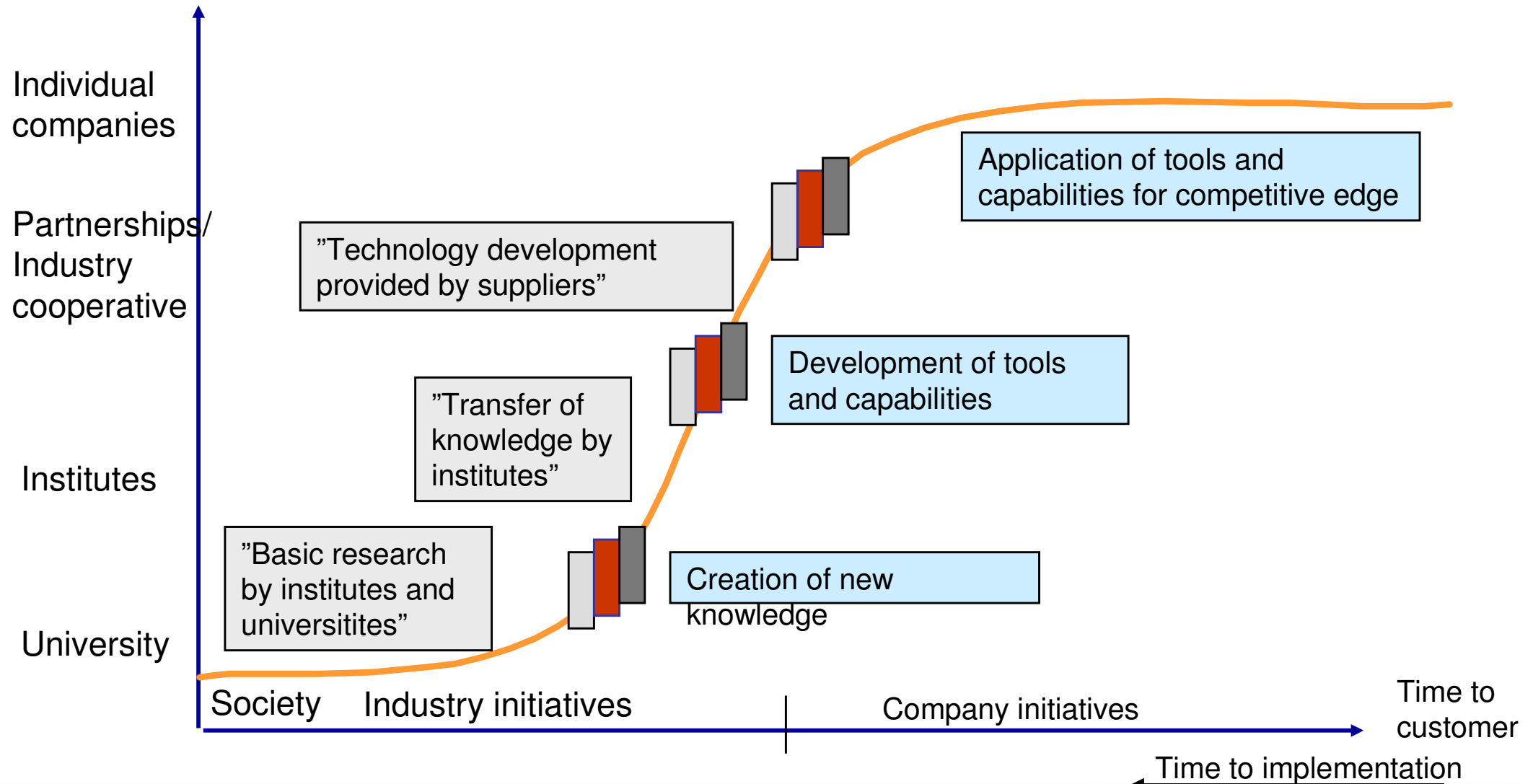
## Where Does the R & D Activity for the Forest Based Industry Take Place?

- ▶ Forest Industry itself with Its Affiliates 30%
- ▶ Machinery & Automation Suppliers 50%
- ▶ Chemical Suppliers 20%
- ▶ It is estimated that around 20% of this funding comes from EU-programmes.





# Degree of proprietary/providers





## **Forest Industry's R & D Activity in Customer Interface vis á vis the Competing Industries (estimates)**

- ▶ Wood Based Construction invests today in R & D ca. 20 % of what the Concrete and Steel Industry does!
- ▶ Forest Based Packaging Industry invests ca 5% of what the Chemical Industry does for Packaging.
- ▶ Electronic Media (including the mobile industry with its applications) invests for media applications 100 times more than the forest industry does for print media.





# Participants in mobile platform



## ▶ Manufacturers

- **Alcatel \***
- **Ericsson \***
- Lucent
- Motorola
- **Nokia \***
- Philips
- **Siemens \***
- STMicroelectronics
- Thales

## ▶ Operators

- Deutsche Telekom
- France Telecom
- H3G
- Telefonica
- TIM
- Vodafone

\* Red marked organisations represent current Executive Group



## Networking (IT application)

- ▶ The basic approach is based on early research cooperation in industry consortia, e.g. in EU funded projects. These consortia comprise usually different stakeholders (manufacturers, network operators, research centers, universities).
- ▶ Partners from competing organizations are cooperating in the precompetitive domain. This is the time window to develop harmonised solutions.
- ▶ Results of these research activities will be submitted to the international standardisation and regulatory process.
- ▶ With respect to the early consensus building standardisation is eased. This cooperation is possible due to the support of the participating organisations and based on people and networking between colleagues from different organisations.
- ▶ The mobile communications industry established this during several years and it took some time to build trust relations and to learn the cooperation.





## Forest-Based Sector Technology Platform's (FTP) by including all stakeholders aims at

- ▶ Meeting the multifunctional demands on forest resources and their sustainable management.
- ▶ Strengthening competitiveness.
- ▶ Strengthening position as the global technology leader.
- ▶ Promoting sustainability - a competitive advantage for the forest-based sector.
- ▶ Stimulating pre-competitive industrial collaboration and engagement in research!
- ▶ Carrying out more efficient R&D with the help of better coordination and management
- ▶ Promoting Innovations within the European forest-based sector (EFBS)
- ▶ Promoting collaborations beyond the borders of the EFBS

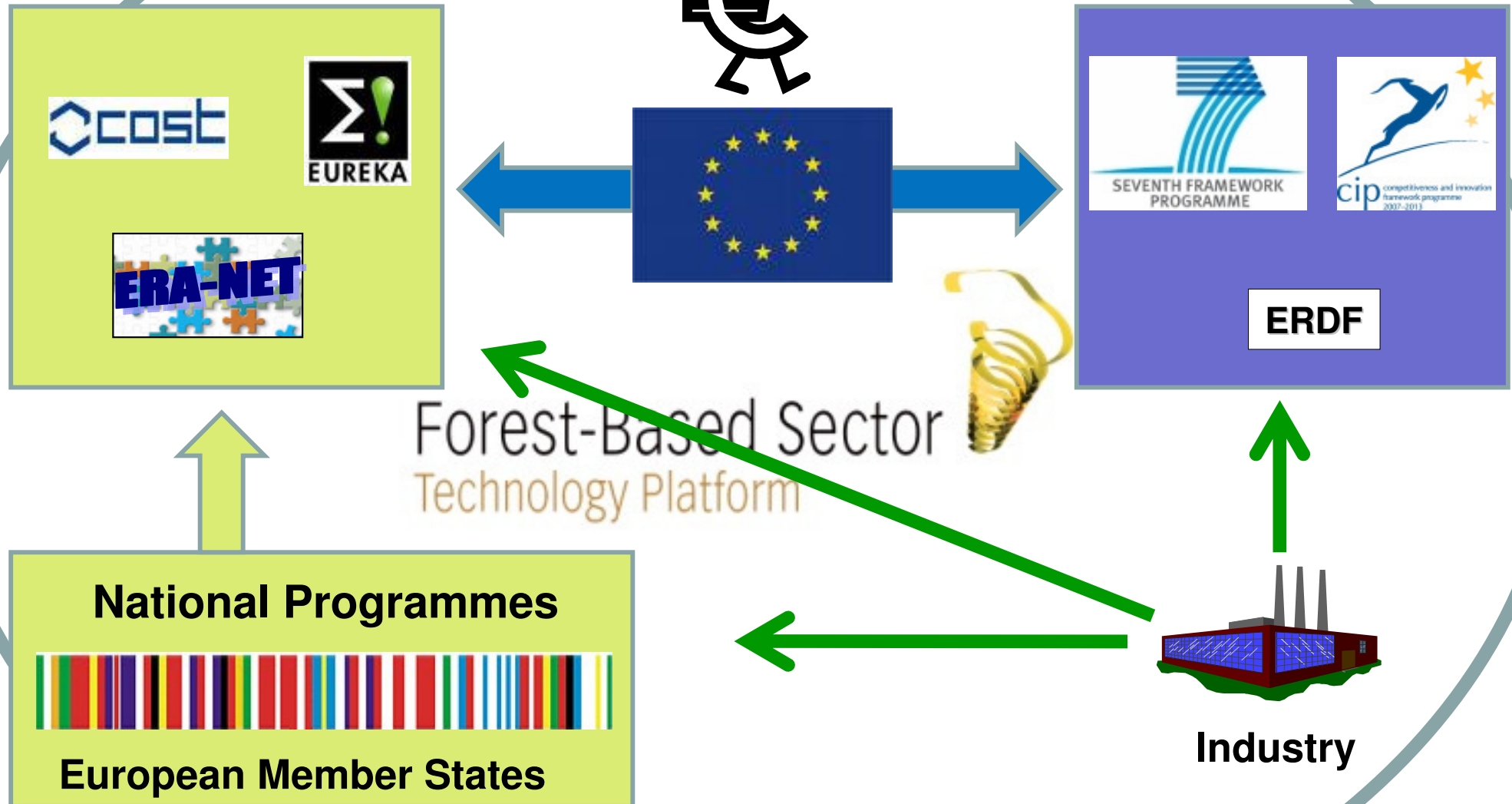


## European R&D Policy and PPP/JTI

- Structuring the **European Research Area (ERA)**
  - » Focussing on activities which have a long-term impact
  - » Moving **from a „project-based“ approach to a „programme-based“ approach**
  - » New forms of **long-term public-private partnerships**
  - » New instruments based on new legislative and financial nature (Article **169** or **171** European Treaty)



# Simplified Funding Scheme



EU support covers max. 20% of all research activities in the fbs!



# Europe's forest-based sector – strengths and challenges

- ▶ Unique strengths:
  - Sustainability - providing multiple socio-cultural, economic and environmental benefits
  - Role in mitigating climate change – potential for being carbon neutral
- ▶ Challenges:
  - Securing availability of raw materials for products and bioenergy while respecting varied forest uses
  - Pursuing development and design of products and services that meet present and future consumer needs
  - Securing innovative lead - continuously expanding knowledge and competence base



## Did you know?

1. The total, global, annual biomass growth is about equal to the global primary energy consumption
2. Of the total global primary energy use about 10 % is bioenergy.
3. This use can be doubled according to VTT estimates.



## Did you know?

1. The total, global, annual biomass growth is between 200-250 billion ton, of which 35-40 % is cellulose
2. The global production of synthetic polymers is about 270 million ton
3. The annual synthetic polymer production correspond to less than 0.5 % of the annual cellulose growth



## Positive image of the future ...

### Communications

—

[printing paper]

+

[hybrid media]

[new technology]

+

[packaging]

+

+

+

[experience dimension]

### Traffic

[permanent change of  
the political atmosphere]

+ ?

[biofuels]

[energy business?]

### Energy

[permanent change of  
the political atmosphere]

+ + +

[heat, electricity, pellets,  
woodchips, firewood, etc.]

### Construction

+ +

+ + +

[different fields of  
construction]

- ?

[apartment building  
construction]

+ ?

[climate change]

### Tourism

+ + +

[different types of  
client groups in  
tourism]

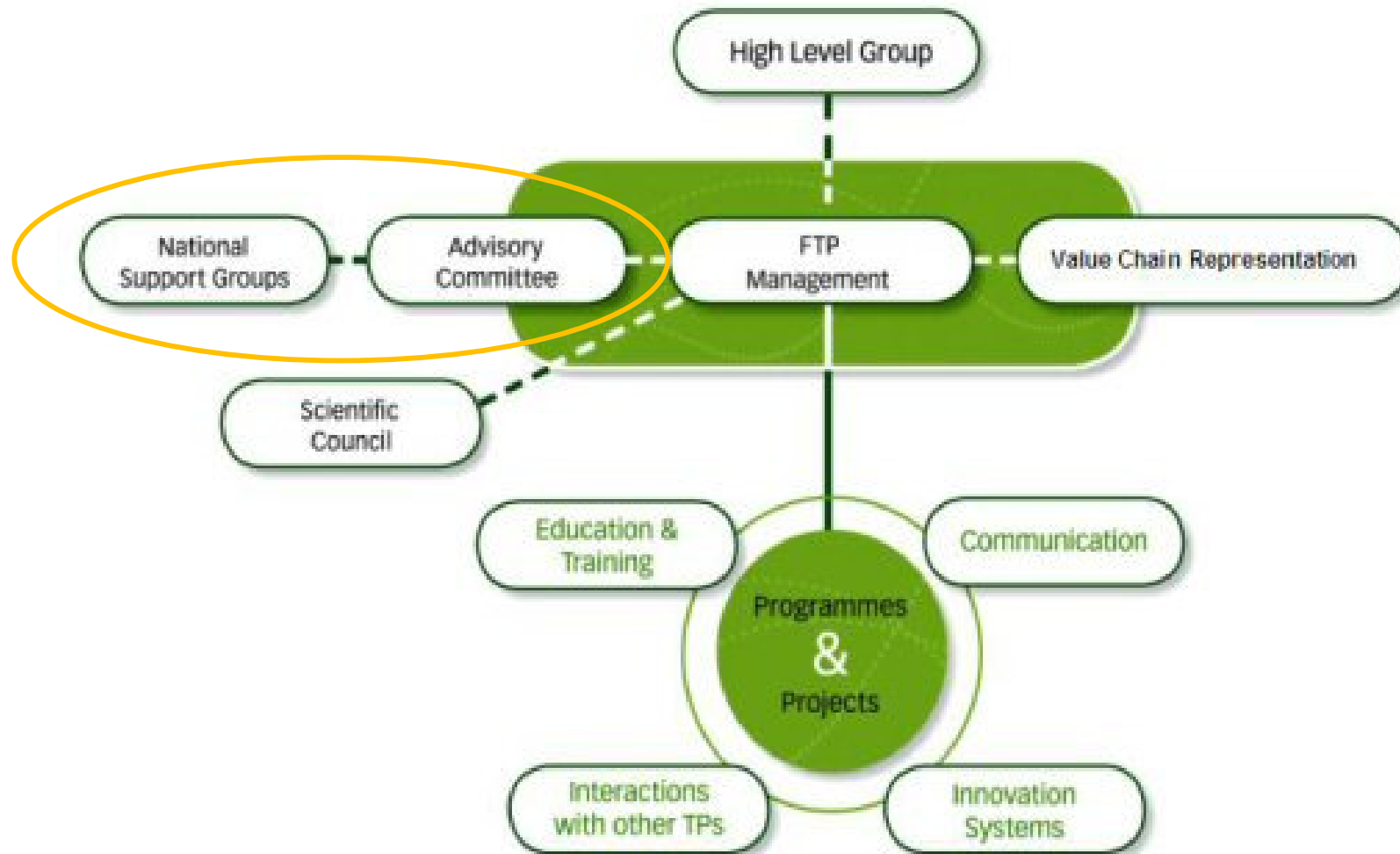
# Forest-Based Sector Technology Platform (FTP)

- ▶ One of 35 European Technology Platforms
- ▶ Set up in 2004 by European confederations
  - CEI-Bois, CEPI, CEPF (in 2007 EUSTAFOR joined)
  - From 1 January 2009 registered as *ltd* under Belgium law
- ▶ Promotes research and innovation in the sector
- ▶ Assembles the entire sector: industry (including SMEs), forest owners, research community – but **industry driven!**
- ▶ Partnership approach, both within and across borders
- ▶ Role of EU: facilitating and guiding but not leading or owning



# FTP organisation

## Implementation Structure



# High-Level Group

- ▶ FTP's decision-making body, steering its activities
- ▶ Composition:

*Magnus Hall (chairman), Holmen*

Mikael Eliasson, CEI-Bois

Filip De Jaeger, CEI-Bois

Paolo Mattei, CEPI

Teresa Presas, CEPI

Christer Segersteen, CEPF

Morten Thoroë, CEPF

Thomasz Wojciech, EUSTAFOR

Robert Motala, new Member States

Lars Gädda, Advisory Committee chair (NSG's)

Giuseppe Scarascia-Mugnozza, Scientific Council chair

*Observers:*

Luis F. Girao, DG Enterprise

Timothy Hall, DG Research

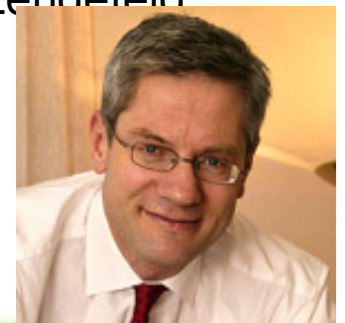
José-Lorenzo Valles, DG Research

Hilkka Summa, EC interservice group for forest-related issues

*FTP Management:*

Kimmo Kalela (Director)

Andreas Kleinschmit von Lengefeld  
(Manager)



*Magnus Hall  
(Photo: Holmen)*

# National Support Groups



Established



Under establishment

National Programmes



European Member States





# National Support Groups (NSGs)

- ▶ Implement the FTP's ambitions and activities at country level
- ▶ Bring together the forest-based sector in a specific country
  - industry, SMEs, forest owners
  - research community
  - policy-makers and funding agencies
- ▶ Develop and use National Research Agendas (NRAs) as main instrument



# Struktur der deutschen FTP-Gruppe



Waldbesitzer

Holzwirtschaft

Papierindustrie

Steuerungsgremium

**Kontakt Projekt-Management**

Konstantin von Teuffel

Alfons Bieling

## Steuerungsgremium der deutschen FTP-Gruppe

Vorsitzender: v. Teuffel

**AGDW/KWF**  
Seeling

**Min. ländl. Raum  
Bad.Württemb.**  
Strittmatter

**Dt. Holz-  
Wirtschaftsrat**  
Merforth

**Dt. Holz- &  
Kunststoffe  
verarb. Ind.**  
Tigges

**Handw. Holzbau**  
Cordes  
**Holzwerkstoffe**  
Sauerwein

**VDP**  
Windhagen

**Bayer. StM Landw.  
u. Forsten**  
Biermayer

**DVFFA**  
Erler

**Ingenieur-  
Holzbau**  
Wiegand

**Holzforschung**  
Welling

**DGfH**  
Jentsch/Moser

**PTS**  
Rizzi

Expertenpool aus Wirtschaft und  
Wissenschaft aus den Bereichen

Forst

Holz-  
produkte

Zellstoff- und  
Papierprodukte

Bioenergie

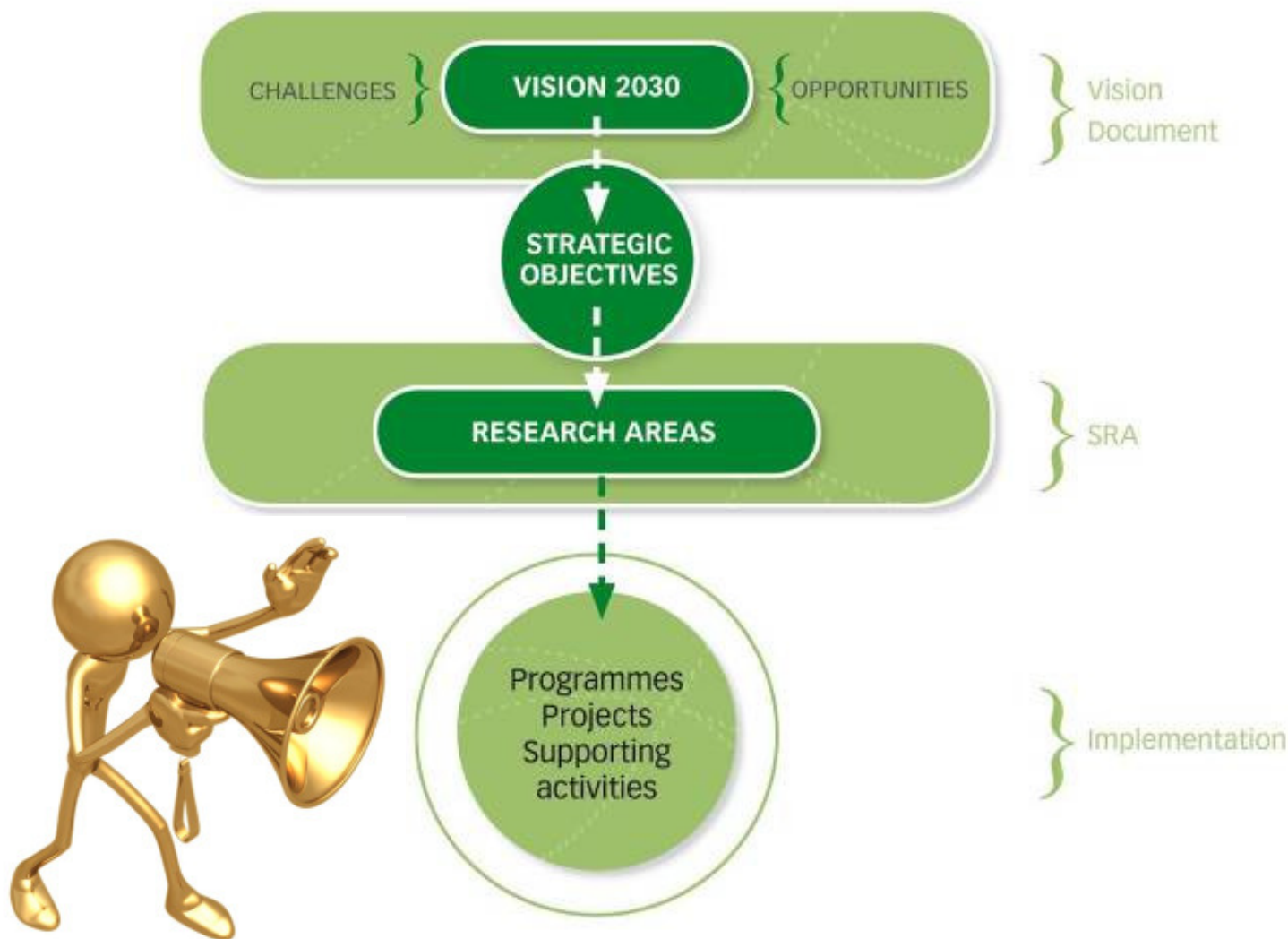




# FTP implementation process



## FTP STEPS



# Mobilising the entire forest-based sector

- ▶ All major value chains are represented in the FTP
- ▶ The FTP involves industry (including forest owners) as well as the research community
- ▶ Strategic Research Agenda was truly cross-sectoral effort
- ▶ During SRA preparation > 700 ideas from 1,000 experts across Europe were received
- ▶ Conferences and events at European and national level have attracted thousands of participants



## Klimawandel – Schutz und Anpassung

- Verlässliche Erkenntnisse über die Auswirkungen des Klimawandels und Ableitung von geeigneten Schutzkonzepten
- Umsetzungsorientierte und flexible Strategien zur Anpassung an den Klimawandel
- Speicherung von Treibhausgasen in Rohstoffen und Produkten sowie die Verringerung von CO<sub>2</sub>-Emissionen bei der Produktion

## Entwicklung einer Bio-Ökonomie

- Innovative und ökoeffiziente Produkte & Dienstleistungen
- Neuartige Produktionstechnologien und -prozesse mit effizientem Rohstoff- und Energieeinsatz
- Sozioökonomische Wechselwirkungen bei der Entwicklung einer Bio-Ökonomie

## Nachhaltige Rohstoffversorgung

- Mobilisierung und Nutzung vorhandener Potenziale von Rohholz sowie gebrauchten Holz- und Papierprodukten
- Bewertung von Nutzungskonkurrenzen und Anwendung praxisorientierter Lösungskonzepte
- Effiziente Nutzung der Rohstoffe durch verbessertes Recycling und Verwertung in Kaskaden



# Strategic Research Agenda

These 5 Strategic Objectives span from customer needs back to sustainable forest resources

26 Research Areas (RAs) were identified:

- 10 RAs on novel products
- 6 RAs on efficient manufacturing
- 4 RAs on advanced logistics
- 3 RAs on sustainably managed resources
- 3 RAs on socio-economic aspects (message to society)





Strategic Objectives	Forest-Based Value Chains				
	Forestry	Wood Products	Pulp & Paper Products	Bio-energy	Specialities
1. Development of innovative products for changing markets and customer needs	1-6: Commercialising soft forest values	1-1: <i>A new generation of functional packaging</i> 1-2: Living with wood 1-3: Building with wood 1-4: <i>New generation of composites</i>	1-1: <i>A new generation of functional packaging</i> 1-2: Paper as a partner in communication, education and learning 1-3: Advancing hygiene and health care 1-8: <i>Pulp, energy and chemicals from wood bio-refinery</i> 1-10: <i>New generation of composites</i>	1-7: Moving Europe with the help of bio-fuels 1-8: <i>Pulp, energy and chemicals from wood bio-refinery</i>	1-8: <i>Pulp, energy and chemicals from wood bio-refinery</i> 1-9: "Green" specialty chemicals 1-10: <i>New generation of composites</i>
2. Development of intelligent and efficient manufacturing processes, including reduced energy consumption		2-4: Advanced technologies for primary wood processing 2-5: New manufacturing technologies for wood products	2-1: Reengineering the fibre-based value-chain 2-2: More performance from less inputs in paper products 2-3: <i>Reducing energy consumption in pulp and paper mills</i>	2-3: <i>Reducing energy consumption in pulp and paper mills</i> 2-6: Technologies to boost heat and power output	
3. Enhancing availability and use of forest biomass for products and energy	3-1: Trees for the future 3-2: "Tailor-made" wood supply	3-2: "Tailor-made" wood supply 3-4: Recycling wood products - a new material resource	3-2: "Tailor-made" wood supply 3-3: Streamlined paper recycling	3-2: "Tailor-made" wood supply	3-2: "Tailor-made" wood supply
4. Meeting the multifunctional demands on forest resources and their sustainable management	4-1: Forests for multiple needs 4-2: Advancing knowledge on forest ecosystems 4-3: Adapting forestry to climate change				
5. The sector in a societal perspective	5-1: Assessing the overall performance of the sector 5-2: Instruments for good forest-sector governance 5-3: Citizens' perceptions				

*Italic = addressing more than one value Chain*



# Taskforce on FP7 Work Programmes

- ▶ Secretary: Martin Greimel (NSG Austria, FTP Management Group)
- ▶ Set up in September 2007
- ▶ 7<sup>th</sup> Framework Programme in focus
- ▶ Cooperate and improve contacts with national Programme Committee members
- ▶ Improve quality of FP7 proposals from National Support Groups
- ▶ Terms of reference:
  - analyse early information on FTP related Work Programmes (WPs)
  - contribute in WP development
  - no direct contact towards EC (task of FTP Management)
  - one representative per NSG
- ▶ Each member creates own national network

# FP7 Structure



## Cooperation

Budget: 32 billion €



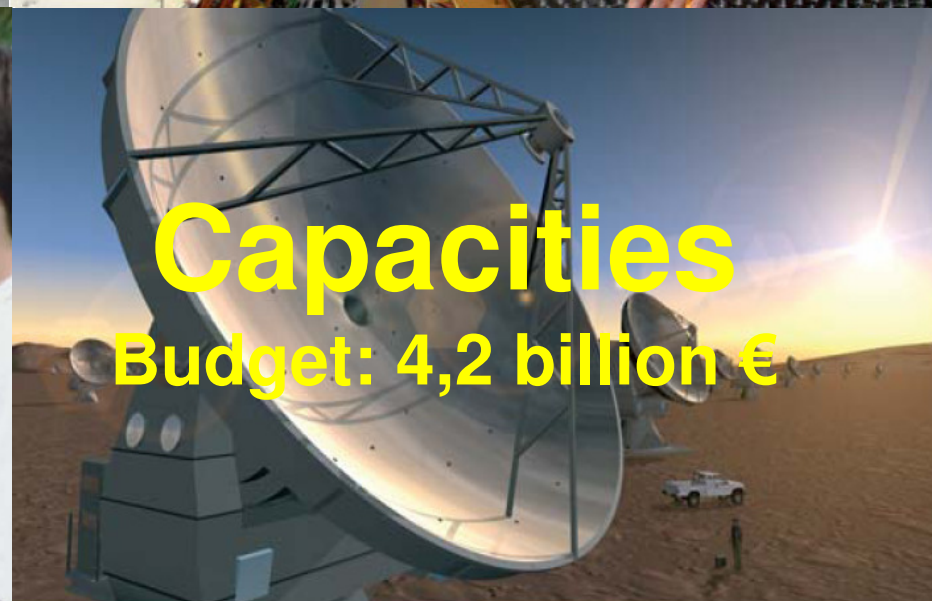
## Ideas

Budget: 7,4 billion €



## People

Budget: 4,7 billion €



## Capacities

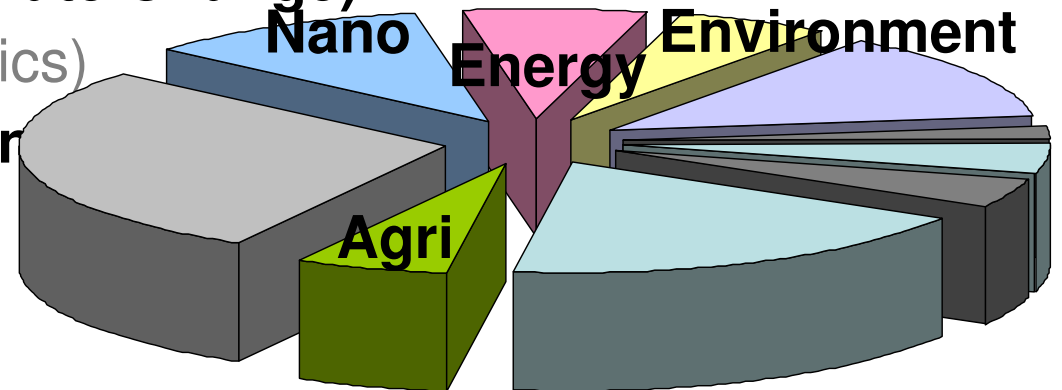
Budget: 4,2 billion €





## Ten thematic priorities of collaborative research

1. Health
- 2. Food, Agriculture and Fisheries, and Biotechnology**
- 3. Information and Communication Technologies**
- 4. Nanosciences, Nanotechnologies, Materials and new Production Technologies**
- 5. Energy**
- 6. Environment (including Climate Change)**
7. Transport (including Aeronautics)
- 8. Socio-economic Sciences and Humanities**
9. Space
10. Security

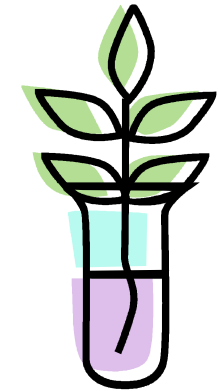




<b>Calls for proposals - Work Programmes</b>	<b>Number of topics in FP7 of interest to the forest- based sector</b>	<b>Number of topics specifically addressing the forest-based sector*</b>
<b>1st - WP 2007 Themes 2, 4, 5, 6</b>	<b>53</b>	<b>14</b>
<b>2nd - WP 2008 Themes 2, 4, 5, 6</b>	<b>43</b>	<b>7</b>
<b>3rd - WP 2009 Themes 2, 5, 6</b>	<b>31</b>	<b>13</b>

\*examples: „Novel forest tree breeding“ (WP 2007),  
„Development of adaptive forest management models“ (WP 2008), B-W  
project!  
„Meeting industrial requirements on wood raw material quality and quantity“  
(WP 2009)





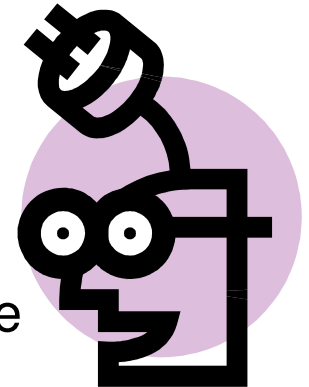
## More resources for R&D

- ▶ Sector has been much more visible in 7<sup>th</sup> Framework Programme (compared to FP6)
- ▶ FTP with its NSG – network as facilitator for the building of consortia and the proposal elaboration(s)
- ▶ Initial outcome of first and second calls point at several projects from sector being funded under Themes 2 (KBBE), 4 (NMP) and 6 (Environment)
- ▶ Funding has also improved and become better coordinated at country level
  - For example: Finland & Sweden have set up special institutes to promote and coordinate R&D funding in sector

# Key Actions of FTP in 2009 and onwards

- ▶ FTP is a legal entity: FTP Ltd – limited company since 21 January 2009
- ▶ Improvement of the performance of the day-to-day operations
- ▶ Intensified collaboration / support with the FTP network (NSGs) [*FTP Management tool = Wiki based*]
- ▶ Evaluation of the Biorefinery joint call within FP7:  
application for a Coordination Action done  
on 2 Dec 2008: StarCOLIBRI
- ▶ **Strong focus on Bio Refinery:**  
Technology Initiative  
Private-Partnership

Co-operation on Joint  
/ Application (Public-  
with other ETPs)

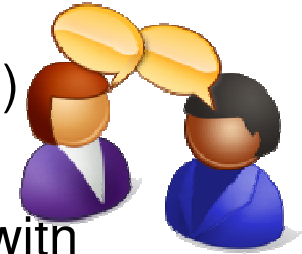






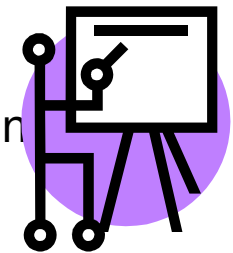
# Key Actions of FTP in 2009 and onwards

- ▶ Company Specific Seminars on FTP's Goals (face to face)
- ▶ Brokerage events for coming calls within FP7 (organised with the scientific networks / organisations EFI, EFPRO and Innovawood)



14 / 15 May 2009 (feasibly Vienna)

- ▶ FTP Conferences and major seminars:
  - 18 – 19 June, Vienna, **„Innovation in practice“** – seminar in connection with Schweighofer Prize
  - **FTPC 2009**, 9-11 November 2009, **„From Research to Business“**, Stockholm, Sweden as part of the Swedish EU presidency



- ▶ Extensive Reports:
  - Innovation Task Force
  - Education and Training





## What is a JTI ? What origin? Which objectives?

- JTIs are **public-private partnership** with the **legal form** of a joint undertaking. Partners are:
  - » European Commission
  - » Enterprises (and/or Industrial Associations)
  - » optional Member States and/or other groupings (Art. 169)
- JTIs usually have their origin in European Technology Platforms
- JTI's objectives are:
  - » **Fostering long-lasting transnational R&D co-operation** in areas of **key importance of European economy**
  - » Strengthen **Europe's position as technology and economy leader**
  - » **Respond on essential industrial needs**



## Some JTI Examples



### Clean Sky

- » Reducing emissions from air transport
- » Budget 2008-2017: 1,6 billion € (EC: 0,8; private: 0,8)



### Innovative Medicines

- » Re-invigorating bio-pharmaceutical development in Europe
- » Budget 2008-2017: 2,0 billion € (EC: 1,0; private: 1,0)



### Fuel Cells and Hydrogen

- » Implementation of hydrogen as energy carrier and fuel cells as energy converters
- » Budget 2008-2017: 1,0 billion € (EC: 0,5; private: 0,5)



### Artemis

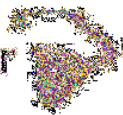
- » Embedded Computing Systems
- » Budget 2008-2017: 2,7 billion € (EC: 0,4; member states: 0,7; private: 1,6)

# Partners within a BIO REFINERY PPF

Forest-Based Sector  
Technology Platform



Forest-Based Sector



Joint Technology Initiative

**Bio refinery**

(a Joint Undertaking of enterprises  
and the European Commission)



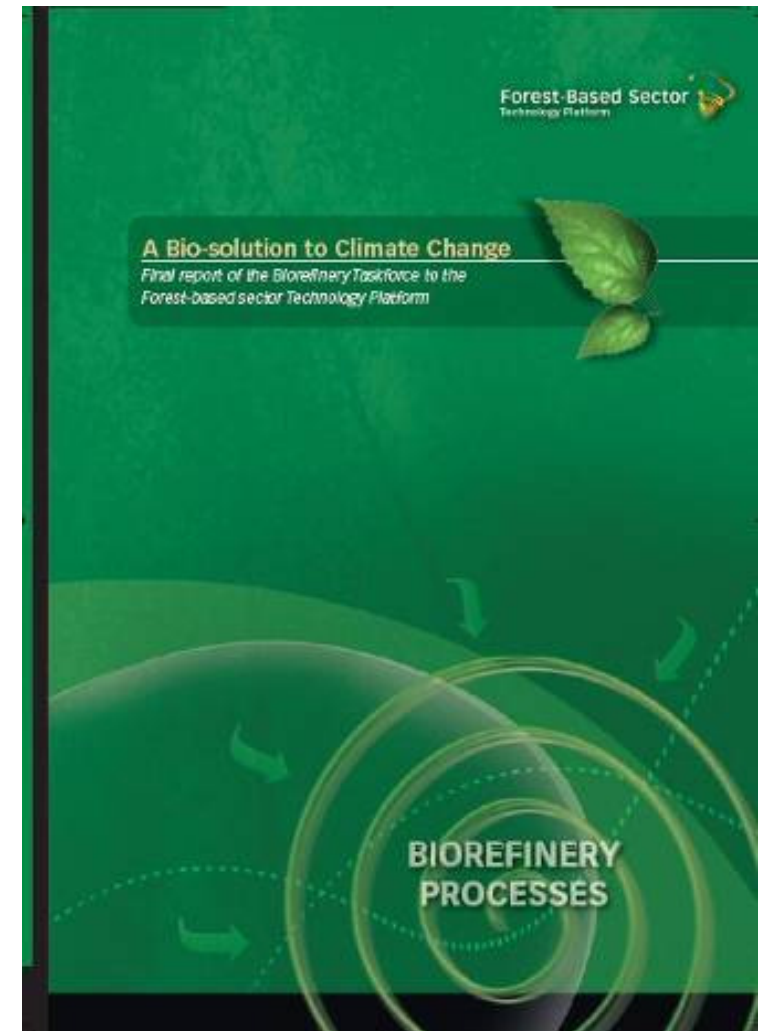
Encouraged by Commissioner Janez Potocnik after FTPC5 in Kranjska Gora,  
Slovenia





# Biorefinery Taskforce

- ▶ Secretary: Johan Elvnert  
(Mindpulse; FTP Management Group)
- ▶ Focus on biorefinery processes and issues of relevance to the sector
- ▶ Prepared report “A Bio-solution to Climate Change”
- ▶ New composition and new tasks in 2009

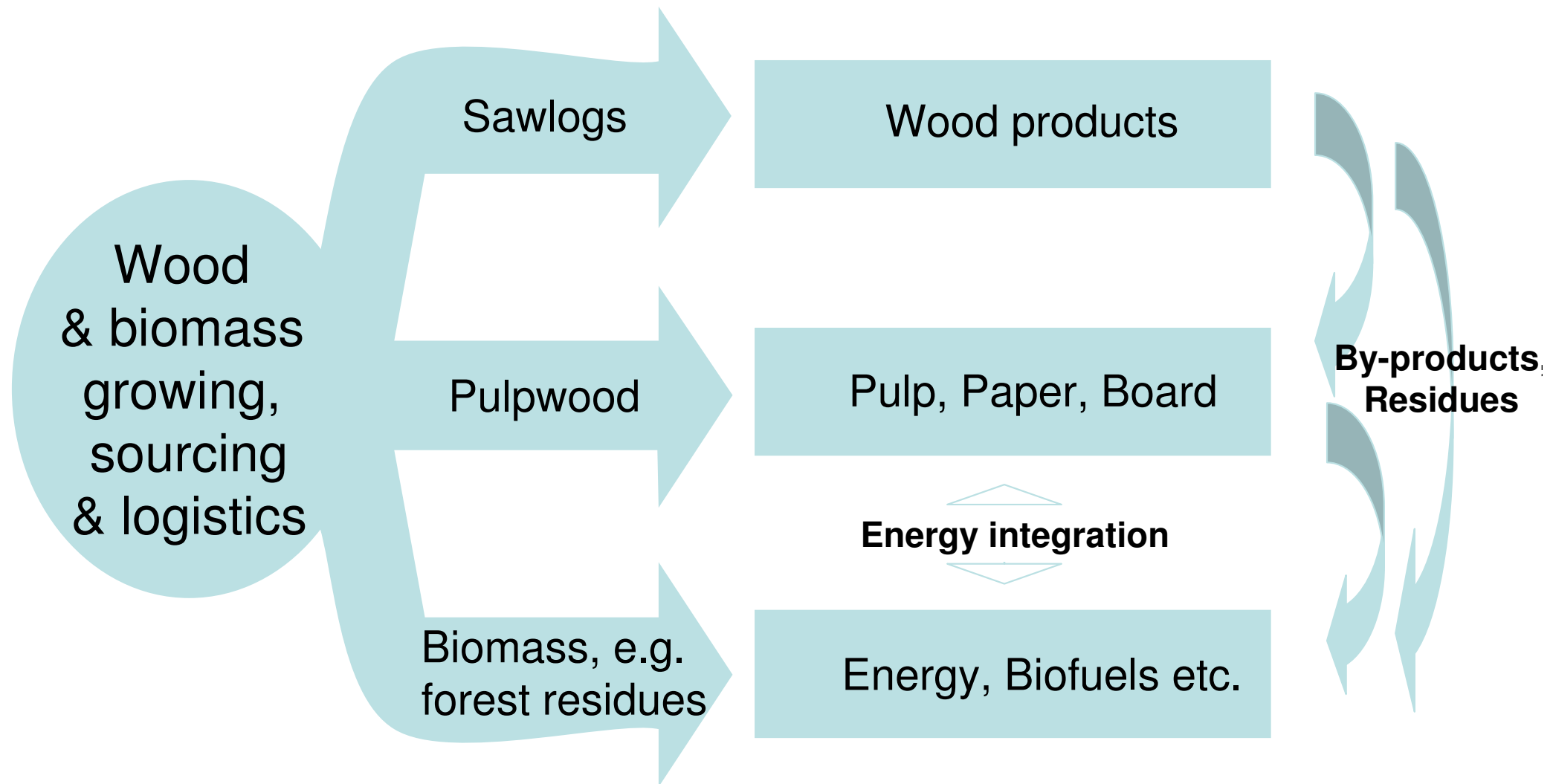




BIOREFINERY IS THE SUSTAINABLE  
PROSESSING OF BIOMASS INTO A  
SPECTRUM OF MARKETABLE  
PRODUCTS AND ENERGY



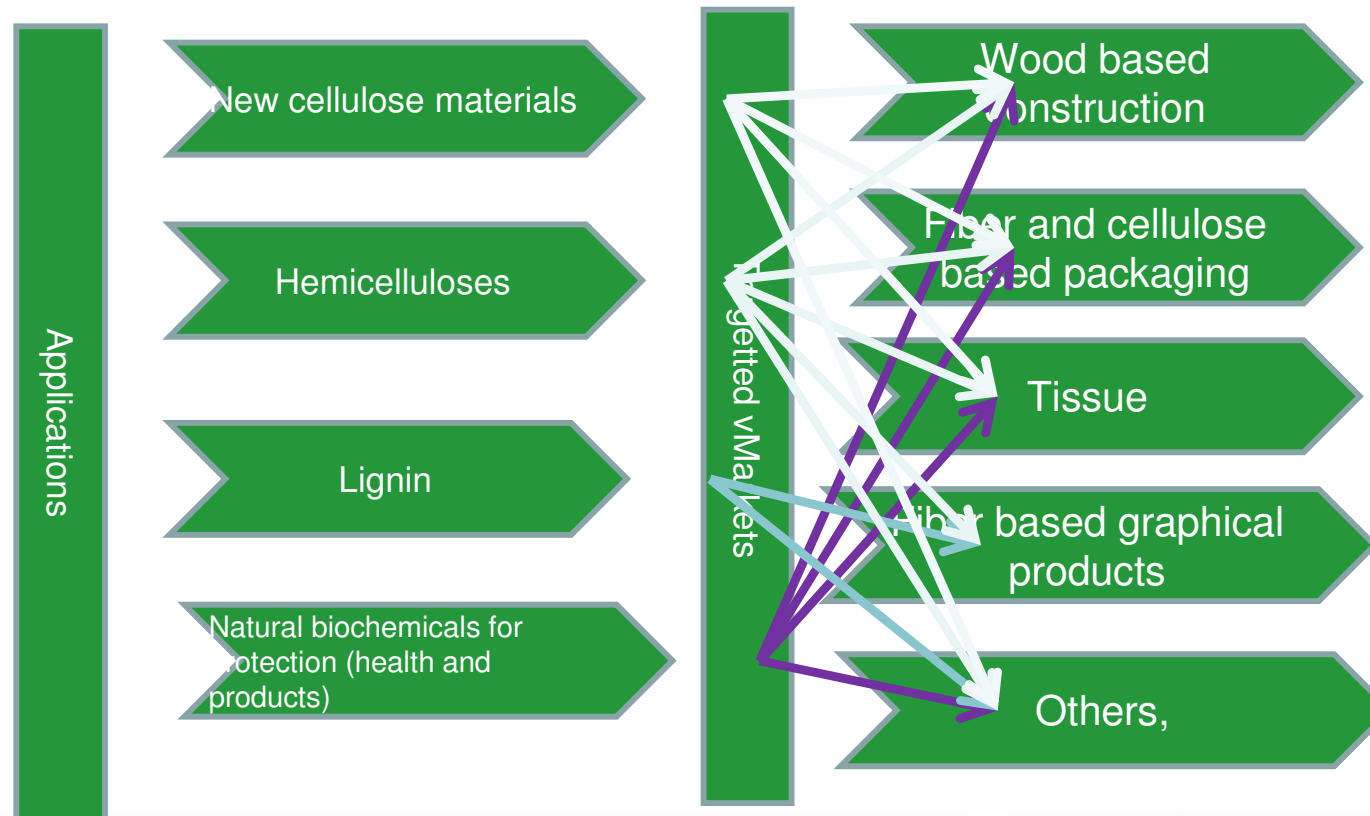
# Bioenergy & biorefining fit into the integrated business model of the forest products companies



# Biorefinery Programme set up

## NON-Food

### Identified and targetted overall applications





## Benefits of a JTI BIOREFINERY

- Strong push and pull to the sector for new developments and new businesses
- Bringing together partners and competitors for biomass utilisation
- Bringing together fragmented efforts & **building critical mass, combining European & Privat funding, mobilising Venture Capital**
- **Leveraging the strenght of trans-national and multidisciplinary reserach activities**
- **Committed Budgets, reduced uncertainties**
- Speed up innovation by simplified and acceletated procedures

# FTP conferences and events

- ▶ 2005: Research Forum, Stockholm, Sweden
  - Innovative & sustainable use of forest resources
- ▶ 2006: Conference, Admont, Austria
  - Implementing the SRA
- ▶ 2006: Conference, Lahti, Finland
  - Speed-up innovations in sector
- ▶ 2007: Conference, Hannover, Germany
  - Lead markets for forest-based sector
- ▶ 2008: Conference, Krjanska Gora, Slovenia
  - Focus forest-based business, new member states

**9 – 11 November 2009:**  
**Conference, Stockholm, Sweden**

- From Research to Business!





**[www.forestplatform.org](http://www.forestplatform.org)**

